



TacSat-3 Micro Satellite

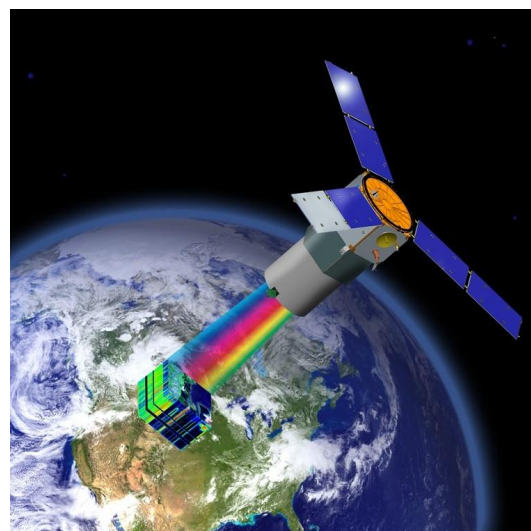
Planned for launch in October 2007, the Tactical Satellite-3 (TacSat-3) spacecraft features an onboard processor, which will provide real-time data (within 10 minutes of its collection) to the combatant commander in the theater of interest. The TacSat-3 program is a team effort. Partners include the Army Space and Missile Defense Command, Air Force Space Command, the Department of Defense's (DOD) Office of Force Transformation, the Office of Naval Research (ONR) and the Air Force Research Laboratory's Space Vehicles Directorate.

Originated in 2004 as part of the Responsive Space Initiative addressing the military's need for responsive, flexible, and affordable systems operating in the cosmos, TacSat-3 serves as the first in the series of small satellites to go through a formal payload selection process based on the combatant commands' recommendations and a review by a flag officer panel. The spacecraft will consist of three distinct payloads: the Advanced Responsive Tactically Effective Military Imaging Spectrometer (ARTEMIS) hyperspectral imager (HSI), the Ocean Data Telemetry Micro satellite Link (ODTML), and the Space Avionics Experiment (SAE).

Serving as the mission's primary experiment, the ARTEMIS HSI, developed by Raytheon Company, will rapidly supply data on target detection and identification, as well as information related to preparing the battlefield and assessing combat damage. The ODTML is the secondary payload. Provided by the ONR, the apparatus will collect data from sea-based buoys and transmit the

information back to a ground station for expeditious communication to the warfighter. The third payload, the AFRL-designed SAE, will validate plug-and-play avionics capability, which will involve the use of reprogrammable components to integrate the SAE experiment and the spacecraft structure. The small TacSat-3 satellite, weighing less than 400 kilograms (880 pounds), will also exhibit a first generation modular bus providing the adaptability for future TacSat missions.

The \$50 million program has accomplished all key milestones to date, but the next several months will be critical in meeting the aggressive launch schedule. By early 2007, the three payloads will be shipped to AFRL's Space Vehicles Directorate, Kirtland Air Force Base, N. M., for integration with the modular bus and completion of system-level testing. While this process typically takes several months, the TacSat-3 program's goal is to complete all activities within 60 days. AFRL will then ship the satellite to the launch site and mate it with the launch vehicle.



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505.846.4704/4321

Space Vehicles Directorate

Air Force Research Laboratory

FACT SHEET

As a key team member in the TacSat-3 project, the Space and Missile Systems Center's Space Development and Test Wing, also located at Kirtland AFB, N.M., is providing the Orbital Sciences Corporation's Minotaur 1 launch vehicle. The four-stage rocket consists of two stages taken from retired Minuteman intercontinental ballistic missiles, and another two stages from Orbital's Pegasus booster.

Launch will occur next year from the National Aeronautics and Space Administration's Wallops Island, Va., launch facility. In addition to fulfilling this significant role, SMC's Space Development and Testing Wing will assist with mission operations during TacSat-3's planned, one-year flight in low earth orbit at approximately 425 kilometers altitude.

